

AMENDMENTS TO THE SPECIFICATION

Please replace the Title of the application on page 1 with the following amended title:

METHODS FOR ACCELERATED WATER EVAPORATION SYSTEM

Please insert after the title on page 1 the following new paragraph:

This application is Continuation of United States Application No. 10/258,635, filed October 24, 2002, now Patent No. 6,637,379, which is the National Stage of International Application No. PCT/US01/13115, filed April 24, 2001, which claims the benefit of United States Provisional Application No. 60/199,289, filed April 24, 2000, each hereby incorporated by reference.

Replace the paragraph beginning at page 4, line 25 and ending at page 5, line 2 with:

Another significant problem with existing liquid management technology may be that exhaust fans or blowers are required to move gases generated by conventional liquid-gas converters, or to move exhaust from the combustion of fuels. As can understood from United States Patent No. 5,582,680 vapor flow is encouraged by a blower by drawing in outside air. Similarly, the Landa evaporators and the Encon evaporators use built in exhaust fans to move steam and combustion gases from the processing of liquids. As such, to the extent that these conventional types of liquid to gas ~~converters~~ converters have blowers, fans, or the like to move generated gas, steam, vapor, or the like, they may be more complex, require greater maintenance, be more costly to build, or be more prone to failure than less complex liquid-gas ~~converters~~ converters.

Replace the paragraph at page 12, line 16 and ending at page 13, line 2 with:

As can be understood, the liquid-gas converter can be the type shown by Figure 1 and as above-described. In the instant embodiments being described the nozzle (10) and the energy

source (8) which provides energy (7) can be located within the enclosure (17). Unlike conventional liquid to gas conversion technology, as liquid (1) is converted to gas (2), solids (13), which can no longer stay in solution, accumulate on the deposition surface (12) which can be the interior surface (18) of enclosure (17). The temperature of the ~~condensation~~ condensation surface (14) can be controlled by a cooling element (23) coupled to the exterior surface of the enclosure (17) to allow a portion of the gas to condense on the condensation surface (14) as condensate (15). As an alternative to allowing condensate to form, the volume of liquid (1) dispersed by the nozzle (10) can be adjusted to disperse a volume of liquid (1) which is in excess of the liquid to gas conversion rate. The amount of excess liquid dispersed may be in the range of about one percent to about five percent of the total amount of volume dispersed, or may be any amount of desired excess volume of liquid. The enclosure (17) can be configured to allow the force of gravity to move the condensate (15), or excess volume of liquid, over the condensate transfer surface (16) to combine the condensate (15), or excess volume of liquid, with the accumulated solids (13) to form a solution (20). The solution can then move over the gravity collection element (21) and then flow to the solution repository (22). Embodiments of the invention which incorporate the deposition surface, condensation surface, condensate transfer surface and the solution removal system can be operated continuously for extended periods of time.

Replace the paragraph at page 13, lines 4-8 with:

Unlike conventional liquid-gas converters which may have to be shut down or taken off line for periodic removal of accumulated precipitates, solids, or other ~~non-volatile~~ non-volatile substances, and may also require cleaning of components to remove baked on solids, prior to conversion of additional amounts of liquid, the instant invention continuously removes accumulated solids automatically in a reduced volume of solution.

Replace the paragraph at page 13, lines 22-31 with:

Moreover, embodiments of the gas ~~expansion~~ expansion compensator invention can further include various embodiments of the pressurization element (3) and the liquid preheating

element (5) as shown in Figure 1. As such, in the gas expansion compensator embodiments of the invention, liquid can be pressurized and preheated prior to being dispersed from the nozzle (10) at the rates above-described and can still be used to generate the necessary pressure gradient to move the volume of gas generated from the liquid toward one of at least two apertures (26) as shown by Figure 3. The gas expansion compensator embodiments of the invention can also include the elements for continuous ~~remove~~ removal of accumulated solids (13) as well as provide the gravity collection element (21) as shown by Figure 2, and as above-described.

Replace the paragraph at page 14, lines 9-22 with:

The burner (31) of the ~~preferred~~ preferred embodiment of the invention can be fueled by natural gas which may be obtained from gas wells at the site where liquid is being converted to gas (or from an alternate source). As an example of one embodiment of the invention, a pressure regulator can be attached to the outlet valve on the dehydrator coupled to a gas well which may reduce gas pressure to about 50 pounds per square inch. A one-half inch transfer tube may be attached from the regulator to a gas scrubber that will automatically shut off the gas supply in the event the separator allows too much water to suddenly enter the evaporation gas supply system. From the scrubber a second pressure regulator may be installed to precisely regulate gas pressure to the burner ([30]31). A one-half gas transfer tube can be run from the scrubber to the burner ([30]31) supplying the burner with gas. Naturally, the regulators, hoses and other components are sized to the actual application as one with skill in the art would readily understand. Alternatively, as discussed above, the burner ([30]31) may also be fueled with propane, kerosene, oil, gasoline, ~~alcohol~~ alcohol, or similar ~~combustable~~ combustible gases and fluids.

Replace the paragraph beginning at page 14, line 24 and ending at page 15, line 2 with:

The burner tube (28) can have a substantially ~~eylindrical~~ cylindrical configuration. A preferred embodiment of the ~~eylindrical~~ cylindrical burner tube (28) can have an internal diameter of about fourteen inches which can be provided by using Schedule 40 pipe, and have a length of about twelve feet. These embodiments of the invention can be operated with the longitudinal axis

of the burner tube (28) vertical to the supporting surface (33) having the first end (29) proximate to such supporting surface. When the cylindrical burner tube (28) is operated with the longitudinal axis substantially horizontal to the supporting surface (33), the invention may further comprise a burner stack (34) and an end cap (35) coupled to the second end (30). The burner stack can also be of ~~eylidrical~~ cylindrical configuration with an internal diameter of about fourteen inches, which can be provided by using Schedule 40 pipe. The end cap (35) can be removed to maintenance of the components within the burner tube (28).

Replace the paragraph at page 15, lines 26-32 with:

Referring to Figure 4, the invention can further include a cooling element (23) that interfaces with a portion of the exterior surface of the burner tube (28). In the embodiment of the invention shown a sleeve or jacket encases part of the length of the burner tube (28). An arrester (36) can also be coupled to the first end (29) of the burner tube. The arrester (36) can comprise an expansion chamber to reduce the velocity of gases or substances that may be move toward the first end (29) of the burner tube (28). Further ~~restrieter~~ restrictor elements (37) may be included to further diffuse or further reduce the velocity of such movement.

Replace the paragraph at page 16, lines 12-19 with:

The embodiments of the invention shown by Figures 4 and 5 can also include the gas expansion compensator above-described and shown by Figure 3. Nozzle (10) can be adjusted to disperse liquid at a rate that generates a pressure gradient (24) within the burner tube (28) having sufficient change in atmospheric pressure per unit distance to move the volume of gas (2) from the burner tube (28) at the second end (30) while drawing sufficient air into the first end (29) of the burner tube (28) for the continuous ~~ignition~~ ignition of fuel by the burner (31). Unlike conventional technology fans, blowers, or the like are not required to form the pressure gradient.

Replace the paragraph beginning at page 16, line 21 and ending at page 17, line 6 with:

As can be understood from Figures 4 and 5, a pressurization element (3) pressurizes liquid (1), such as water, which enters the preheating element (5) installed in the burner tube (28). After passing through the preheating element (5) the pressurized water is discharged through the nozzle (10) having openings which disperse, spray, or a mist pressurized, preheated liquid (9) directly into the flame of burner (31). Substantially all the liquid (1) can be converted to gas and the expanding gases moved by the gas expansion compensator along pressure gradient (24) toward the second end (30) of the burner tube (28). Air is drawn in by the pressure gradient at the first end (29) of the burner tube (28) to maintain the ~~ignition~~ ignition of fuel at burner (31). Substances dissolved or associated with the liquid accumulate on a deposition surface (12) comprising a portion of the interior surface (18) of the burner tube (28). A portion of the gas generated can be condensed on a condensation surface (14) having a location on the interior surface (18) of the burner tube (28) further toward the second end (30) of the burner tube (28). The condensate moves toward the first end (29) of the burner tube (28) on a condensate transfer surface (16) which can comprise the interior surface (18) of the burner tube (28) located between the deposition surface (12) and the condensation surface (14). The condensate (15) combines with the accumulated solids (13) to form a solution (20) that is collected by the gravity collection element (21) that can comprise the portion of the interior surface (18) of the burner tube (28) between the deposition surface and the outlet (46) to the solution ~~respository~~ repository (22).

Replace the paragraph at page 17, lines 8-16 with:

Now referring to Figure 6, which shows a particular embodiment of a gas-liquid converter in a typical operating ~~enviroment~~ environment. Water (or other liquid to be evaporated) (1) can be withdrawn from a water pit (or from a tank or other liquid source) (38) through a liquid pick up element (39). A liquid pick up element float (40) may assist in positioning the liquid pick up element (39) relative to the surface of the liquid (1) in the liquid source (38). The water or liquid to be converted to gas may then be drawn up by a pump (or distributed by gravity or otherwise) (41) and discharged to a holding tank (or other liquid

containment device) (42). The pump may, for example, may be a centrifugal style 1 inch to 3 inch discharge size pump.

Replace the Abstract on page 43 with:

A ~~gas-to-liquid~~ liquid to gas converter to convert liquids (1) to gas (2) that can include a liquid pressurization element (3), a liquid preheating element (5), and a nozzle (10) to disperse liquids into energy (7) generated by an energy source (8). The gas to liquid converter can be located inside an enclosure (17) and substances dissolved in the liquid can accumulate as solids (13) on deposition surface (12) of the enclosure as the liquid (1) converts to gas (2). ~~Condensation~~ Condensation of a portion of the gas (2) generated can be combined with the solids (13) for continuous removal of such solids (13) from the enclosure (17). A gas expansion compensator can generate a pressure gradient (24) to move the volume of gas generated from the liquid from the enclosure (17).